No. 64 Hydrothorax 12

Hydrocephalus
Hydrothorax

James W. M. Wallace
admitted March 23. 1819.

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Observations on Hydrothorax.

It can scarcely be expected that in select=
=ing a subject for an inaugural dissertation I should
choose one in the investigation of which I could
hope to correct former error, or advance any thing
new that would have for its object the improve=
=ment of the science of medicine. Attempts with
this view, however desirable, I at present decline,
by offering some general observations on the seat,
causes and cure of hydrothorax; leaving to those
of maturer years, sounder judgment and more
enlarged experience to explain the difficulties
which hitherto have prevented the full develope=
=ment and perfection of "the healing art." By this
expression I do not mean to depress the profession
of physick. The very reverse would be my wish—
By ~~embarking~~ entering in it, and presenting myself as a
candidate for a degree, I sufficiently show the estim
=ation in which I hold it;—whilst I dwell with
pleasure on the contributions that have been fur=
=nished in different ages, and with no little de=
=light on the improvement which medicine has

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received in this country, and in an especial manner from the University in which I have the honour of being a student.

Before I proceed further, I must take the li=
=berty of stating, that nothing short of a positive law of the University requiring it, could ever have induced me to appear before the best of judges as a writer, disqualified as I feel myself by age and inexperience.— Then, I indulge the hope, will guarantee to this performance, the full share of allowance its imperfections demand.

A collection of serous fluid in any part of the cavity of the thorax constitutes the disease in question;—whether the fluid effused be present in one or both cavities of the pleura, in the par=
=enchymatous structure of the lungs, or in the pericardium alone. I am not certain that this definition is sanctioned by the writers on this subject, but as it appears to me to answer all the purposes of practice, (the treatment not being varied so far as I know by the different situa=
=tion of the water) I see no reason why it should not be adopted.

Hydrothorax is not a disease of very frequent occur=
=rence; yet in every point of view it merits the par=

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=ticular attention of the physician. It is usually, like other forms of dropsy, met with in marshy districts of country, succeeds intermittents and other fevers, and may be brought on from exposure to cold. It however, appears in all climates and situations, and arises in very different states of the constitution. Most frequently, at least as far as my observation has extended, it has been connected more or less with a phlogistic state of the system; but occasionally it is found to be present in an opposite condition of the constitution. Most usually we see this complaint blended with collections of water in other parts of the body; though unquestionably hydrothorax is occa=sionally known to exist for some length of time, without its being connected with, or inducing dropsical effusions in any other part of the human structure. This however, is a rare occurrence.

Symptoms. An effusion of serous fluid within the thorax, usually first discovers it=self by some uneasiness at the inferior portion of the sternum; which does not long continue before some difficulty of breathing is experienced. This is ordinarily for the first

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time felt, when the person ascends an acclivity; or when he places himself in a recumbent posture. But after the disease has taken firmer hold, the difficulty of breathing becomes more constant and very much annoys the patient. The urine is diminished in quantity. The thirst is much augmented. There is sometimes a fever present. The patient in some instances complains of a "delusive pain" or numbness in one of his arms. A cough comes on, that is at first dry, but after some continuance it becomes moist. The matter thrown off is composed chiefly of mucus. I think it is of a whiter colour than the saliva thrown off in health. The most infallible symptom is the fluctuation of a fluid, ascertained either by the attending physician or by the patient himself. The patient after going to sleep is subject to be suddenly awaked with starting and palpitation of the heart.

With the symptoms already enumerated there are commonly adematous swellings of the lower extremities. Some physicians have stated that this adema is often preceded by a partial hydrocele. The pulse, especially after the case

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has been of some standing is small, irregular and intermitting. In one or two cases that have presented themselves to my notice, the pulse even at this period was not without some tension. More frequently at this stage the pulse is small and weak and the face is almost uniformly of a pale colour.

When ~~the~~ hydrothorax is not arrested in its progress, "it commonly proceeds to give more and more difficulty of breathing, till the action of the lungs be entirely interrupted by the quantity of water effused; and the fatal event frequently happens more suddenly than was expected. In many of the instances of a fatal hydrothorax, I have remarked a spitting of blood to come on several days before the patient died". Cullen.

Causes. The causes of dropsy in general and of hydrothorax in particular are not perhaps in all cases to be pointed out with positive certainty; nor indeed ought it to be expected that our views on this head should be very clear and unequivocal, so long as the lymphatic system remains in its present unexplored state. We have,

A. J. Chapman inculcates a similar doctrine in his lectures.

however, in general a sufficient acquaintance with the cause and nature of the disease to direct us successfully, in its treatment. I allude now to some particular forms only, for it will be seen hereafter, that certain cases can not be expected to yield to the resources of our art.

Any cause operating on the venous system, so that the return of blood to the heart is impeded or prevented, is now uniformly acknowledged a source of dropsy. Of the sources of disease operating in this manner, may be mentioned ossification of the large blood-vessels or their valves; the existence of polypi and probably an atony of the vessels concerned in the parts under consideration.*

Exposure to cold is to be considered as another, and probably not one of the least unfrequent causes operating to the production of the particular species of dropsy before us. Of the other causes mentioned as exerting a power in the production of hydrothorax, are the presence of hydatids, aneurismal dilatations situated near the heart, and probable certain morbid

B. Maclean on Hydrothorax page 53.

C. I am fully aware an author of some distinction says, that he who will not admit the presence of a watery fluid in the chest without the fluctuation being heard will search for it in vain. The fluctuation of a fluid is certainly not always evident, but having seen some patients afflicted with hydrothorax who repeatedly told me that they both felt and heard the fluctuation in the chest in changes of posture, I can not doubt of its being a frequent symptom; and this opinion is sanctioned by the high authority of Cullen and others. Lewis's Cullens synopsis p. 157.

D. Maclean p. 2nd.

conditions of that organ may exist the disease.

Dr Cullen refers the existence of dropsies more immediately to "an increased secretion or to a diminished absorption". Perhaps both of these conditions sometimes exist.

Diagnosis. The complaint before us, is liable to be confounded with other diseases of the body.

Those affections for which it may be mistaken, are angina pectoris, asthma and aneurism of some of the large blood vessels of the heart. From the first of these hydrothorax may be distinguished by fluctuation of water in the breast; and by there not being any connected with angina pectoris the adematous swellings of the lower extremities which we meet with when fluid has been effused in the thorax, especially if the disease be of some standing. There is also a diminution in the quantity of urine voided in dropsy a symptom I believe that never occurs in angina pectoris.

[illegible] may be confounded with asthma; but in [illegible] be distinguished by the [illegible] being a [illegible] of urine in asthma,

E Pullen first [illegible] 4th section 1902.

and [illegible] the nervous [illegible] the first [illegible] complaint [illegible] commonly [illegible] at night, [illegible] dropsy [illegible] effusion [illegible] the thorax [illegible] symptoms [illegible] [illegible] the [illegible] [illegible] the first [illegible] difficulty of breathing is always present. [illegible] the paroxysm [illegible] effusion [illegible] present in hydrothorax.

Aneurism of the large vessels contiguous to the heart produces symptoms that may be mistaken for those which accompany hydrothorax. "In general however, a [illegible] the [illegible] come of the large arteries [illegible] considerably aggravated by the causes which accelerate the circulation of the blood are experienced, and serve to distinguish it from this disease". Maclean p. 33.

Starting from sleep and palpitation have been thought to characterise hydrothorax.[E]

Respecting [illegible] this situation the [illegible] [illegible] considered [illegible] [illegible] [illegible] an opinion on the authority of authors, I [illegible] a [illegible]

large doses, unless in the incipient [illegible] would not remove the disease. But from numerous cases [illegible] I should conclude that one half at least of all the cases will be found to yield to the influence of remedies.

Could we ascertain with precision on what state of the parts the disease depended, as for example, whether it owes its existence to inflammation [illegible] the heart to some form of the [illegible] arteries immediately [illegible] from the organ, to obstruction of the whole or [illegible] [illegible] came on as consequent to something, or was produced by [illegible] we might with considerable certainty [illegible] to predict the manner in which the complaint would terminate — but so long as the organ [illegible] which these conditions of the parts originate, the lesions remain in obscurity, [illegible] must it be justly considered an exceedingly difficult task to deliver a correct opinion on what will be the termination of hydrothorax.

In general the degree of danger may be judged of from the difficulty of breathing, by the swelling of [illegible], by the excessive excite

[illegible] patient placed in a horizontal position, by the difficult he experiences in obtaining rest by the violence of the palpitation, and above all by the little good derived from the exhibition of medicines.

We should likewise be careful in forming the prognosis, to ascertain the habits of the patient in regard to the use of intoxicating drinks, and to his age. When it has been brought on by a few premonitory attacks in advanced life it almost certainly proves mortal. Such are the circumstances which induce us to dread an speedy death in the form of hydrothorax. Others might have been enumerated, but as they are more canonical a particular notice of them is dispensable in a paper.

Treatment. [illegible] made on the values of the seat cause distinguishing symptoms and probable termination of hydrothorax we shall now proceed to the exposition of the treatment which in a majority of cases, has proved the most salutary. All the investigations of the physician are directed to the

attainment of the important objects, and attention to low labourers or overseers, he is seldom been employed in other occupations in other departments of his profession. He will be and but little of his time expended in the proper treatment due to the actual existence of disease.

In all cases where the cause can be taken, whether a constitution to operate on the body, it should, if practicable be removed.

In I have said that hydrothorax may arise from a morbid in two opposite states of the human frame, as it will be seen at the conditions will demand a different treatment accordingly as the one or the other may prevail.

As the disease is most usually of an inflammatory nature bleeding from the arm will be required. In common it is not necessary to repeat the venesection often, but occasionally it may be necessary to have frequent recourse to it. I have myself witnessed an attack, in which there was well I recollect eighteen bleedings formed, and not less than twelve or fourteen pounds of blood taken from the system. It is proper to view,

cf. Jenners medical histories p. 34[illegible]

to observe here, that the patient was of large stature, had a full habit and that the disease was of marked on his countenance. The complaint during the second course of treatment recorded as in Chapter, the remedies as said then made. The were uniformly joined his breathing rendered more free & this person all matter was dispelled upon a very visible limit he was attacked with phlegmonous dolens a disease also some what to be clearly connected in the purulent state."

"When the fever was so far accomplished with the cold of the patient, in most recent cases of this fever, we to apply to the breast and arms. By this also, if we in the incipient stage of the disease, a great majority of cases will be arrested in their progress."
Chapman's M & S Lectures.

Next to bleeding blisters have been employed. I have never seen them used; but suppose that much benefit might be received from the application after the [illegible] of the tumor. There come will remain a [illegible] the for [illegible] of the practice in the universality of fever

q. Kielean p. 102.

-oplexia.

He then recommends blisters on the right thorax, places blisters at the back of his remedies. He states that they relieve the urgent symptoms more speedily than the remedies addressed to the stomach and bowels, but says their effects are transient.

Not wishing upon the grounds which have been given, to employ venesection, since the management of the measles, I might appear to have written, if I should omit to record a reflection on the application to this disease in its first stage; but if the medical gentleman, of whom I have been drawing, appears justifiable that much benefit may be expected from the early venesection.

I shall now take the liberty of adding my opinion upon the subject as delivered in his lectures. Blisters seem to be regarded as conducing to the warmth and to the application of cups. They should be repeated until and large enough to cover the whole breast, as soon as one has healed, as they should be applied. In this case I think they are more efficacious than blisters, and to this point my own expe-

H. Ma Lean p. 115

nence furnishes the most ample testimony."

Purgatives, so beneficial in other inflammatory affections, has been recommended, but objections have been raised to its use, which are, that besides being useless or pernicious in the disorders of the chest generally, it fails in this instance of producing abstraction, and exhausts too much the strength of the patient. It will be proper however, to guard against costiveness, and to keep the bowels rather loose than otherwise; and for this purpose cream of Tartar is probable to have the preference.

Notwithstanding the objections which have been urged against the employment of purgatives in hydrothorax, I should hesitate, before deserting of circumstances, to close the remarks on this subject, without observing that Dr Ferriar, one of the ablest of the British physicians, not only thought purgatives admissible, but warmly recommends the Elaterium, than which a more drastic cathartic is not to be found in the whole compass of the Materia Medica.

Besides the remedies already noticed, medicines

colchicum to the exclusion of diuretics are been much employed. The squill is known, the ancients dioscorides.

Of these substances the squill particularly preeminent. With a considerable diuretic power it exerts more or less of an expectorant quality that particularly recommends it in this disease. The dose when taken alone is from one to three grains of the dried root, given twice or three times a day in the form of pill. Notwithstanding the reputation which this medicine has acquired in dropsy, there are few if any cases in which either this or any other remedy is alone confided in. The squill is exhibited in various combinations. Combined with the submuriate of Mercury in the proportion of one, two or three grains of the former to one grain of the latter according to the state of the patient and given twice a day it is found to exert its best powers. By such union effects are obtained that could not be produced by either single.

Disputes have arisen as to the extent in which the squill is to be administered. By some it contended that in order to ensure the

The Chapmans Therapeutics & Mat. Med Vol. 1st
p 267.

diuretic effect, it should produce nausea or even vomiting; whilst others assert, that the diuretic action neither depends on, nor is proportioned to the nausea or vomiting which may precede from its administration. Adopting the opinion of Dr Chapman, I should say "Truth lies in this controversy nearer between the extremes". Then a moderate degree of nausea will not ensure the proper effect, though ~~this~~ it may sometimes be attained when no action is observable on the stomach.

As respects the other diuretics almost the whole might be employed in dropsy, but usage seems to have consecrated only a small number for its management. Though perhaps the whole on some occasions may be brought into use.

The Digitalis holds a high station in the list of remedies against dropsy. It is one of the most powerful diuretics and requires a cautious administration, yet sometimes produces effects highly ~~unpleasant~~ and alarming. The Digitalis is now allowed to be best adapted to those cases in which the force of arterial action has been taken off

E. Chapman's Therap: & Mat: Med: Vol: 1st p. 250.

by pre-ex depletion. The drug may be given in substance, or it may be taken in infusion or tincture. When taken in substance the dose for an adult is one grain morning and night. One table spoonful of the infusion may be given three times a day. The tincture being made of different degrees of strength is not uniformly taken in the same quantity. When made according to Dawson's directions the medium dose is five drops. That of the Edinburgh and London pharmacopoeias is proportionally half the strength, and is consequently given in double the quantity of Dawson's or the saturated tincture.

I have already said the exhibition of digitalis requires circumspection. Some times no sensible effect follows its use for several days, when suddenly symptoms of the most alarming character arise, as extreme prostration of strength, great reduction of pulse &c. These circumstances make it necessary in all cases to begin with an el. dose increasing the quantity gradually, whilst the effect is being watched until the object desired

A. Bateman's Synop: of Nat: Med: Vol: 1st p. 245.

N. Ferrier: Medical Histories p. 212.

be allayed. Diuresis having been once in=
duced, the patient will sometimes continue
to void urine in large quantities for seve=
ral days even although the medicine
is discontinued.

Another singular circumstance attending
the use of digitalis is, that its effects on the
pulse and probably on other parts of the
human frame may be made to vary, by
changing the posture of the body. The
greatest reduction of pulse takes place
when the person is in a recumbent po=
sition.[e.h.]

The super tartrate of potash is another
medicine in which the medical confidence
is placed. The success that follows its
administration under the direction of
Sterrian in cases of dropsy generally, greatly
exceeded that of any other article employ=
ed by him.[e.h.] He directed from half an
ounce, to an ounce and an half daily dis=
solved in ten ounces of water. The Cream
of Tartar is supposed to be most useful
in those cases accompanied by febrile
action.

The other diuretics most frequently resorted to are the carbonate of potash & the nitrous, nitrate of potash, squilla, meloe vesicatorius &c. These and all the preceding substances, with some others that have not been mentioned are more or less recommended by different practitioners. Each of these substances enters into a variety of combinations, and in this way may be more usefully adapted to the different conditions of the constitution ~~[illegible]~~ that present themselves, as well as to the different periods of the disease.

In some cases of hydrothorax it becomes necessary to change the substance employed, for another of the same class of known inferior diuretic powers. When any advantage should be gained by such substitution, so perhaps hard to be explained; but in practice a knowledge of the fact often serves as an useful guide.

Before I close the remarks on diuretics it is proper to state, that when hydrothorax depends on visceral obstruction it will be necessary, to remove this before a radi=

-cal cure can be made. It is in cases originating in or kept up by obstruction, that mercury combined with diuretics and administered so as to occasion a gentle ptyalism has been productive of the most marked benefit. Under such circumstances mercury alone will often prove highly beneficial, and sometimes completely remove the disease.

Hitherto the substances enumerated for the cure of hydrothorax, with one exception, have been diuretics. I now come to the consideration of another set of remedies of scarcely inferior efficacy;— These are Tonics.

To those cases of hydrothorax primarily depending on debility, however induced, this set of medicines is particularly adapted. There are also other instances of this disease, which though at first inflammatory, and requiring depletion, afterwards assume a more debilitated shape. Hydrothorax existing under either of these forms, it must be evident can only be successfully combated by remedies whose general tendency is to strengthen the whole system. The number of substances employed with

O. Macian p. 126.

his intention is comparatively small. At the end of them may be placed the chalybeate preparations, and next to these the tonic vegetables.

Mallan prefers as a tonic the sulphate of iron combined with salt of tartar and myrrh in the proportion recommended by Dr Griffiths. I have never seen this preparation exhibited in dropsy, but should suppose from the substances entering into its composition, that it is capable of combining a diuretic and tonic power, and therefore that it is particularly suited to dropsy arising from or connected with debility.

Under these circumstances the tonic I should prefer is a preparation formed by saturating water with sulphate of iron and adding enough sulphuric acid to give to the fluid the acidity of Elixir Vitriol. From ten to twenty five drops may be given twice or three times a day. When the full dose is given, the stomach is occasionally so much nauseated that it becomes necessary to lessen the quantity.

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=bo &c. These singly, or variously combined, and the bitter and aromatic ingredients sold in the shops are all useful auxil=
=liaries.

Of the paracentesis thoracis.

After all the medicines of known re=
=putation in hydrothorax have been fully tried without making any salutary im=
=pression, it has been recommended to per=
=form the operation of paracentesis of the thorax, or of drawing off the water by means of tapping. This operation has been seldom performed in this country, and not very often abroad. The result of experience is not much in its favour. In those cases where the operation was performed, the fluid was found rapidly to reaccumulate ~~and the patient~~ was finally carried off— Indeed, when the hydropic fluid is contained in the pericardium, and cannot be evacuated by other means, or is supported by the presence of organic disease, as osci=
=fication of the vessels, aneurismal dilata=
=tations &c, it must appear evident that the operation can not be performed

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with any rational hope of doing good.

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